

Expanded distribution of earwigs in California

(Dermaptera)

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In continuing studies on the earwigs of California, recent records of Dermaptera are presented, plus older data, either missed or somehow not included in current literature.

The earwig fauna of California was recently reviewed by Langston and Powell (1975). However, due to paucity of museum specimens and time lag in publication, their distribution in Santa Barbara County (particularly the Channel Islands), and in parts of the San Joaquin Valley were not well represented. The detailed California records indicate the museums and collections where these specimens are on deposit: California Academy of Sciences, San Francisco (CAS); California Department of Food and Agriculture, Sacramento (CDA); California Insect Survey, University of California, Berkeley (CIS); Los Angeles County Museum of Natural History, Los Angeles (LACM); Merced County Department of Agriculture, Merced (MDA); National Museum of Natural History, Washington, D.C. (NMNH); San Joaquin County Department of Agriculture, Stockton (SJDA); and Santa Barbara Museum of Natural History, Santa Barbara, (SBMNH).

Anisolabis maritima (Géné), *the maritime earwig*

Recorded in Orange County in 1921, and there are quarantine records from Los Angeles and San Diego Counties in the 1930's and 40's. Searches were made by both authors in southern California with no success. Hence, *A. maritima* should remain as only adventive, or by quarantine south of the San Francisco Bay Area. Additional specimens have been taken at established colonies in Alameda, Contra Costa, Marin and Solano Counties, 1973-1976, but no new locations were found since the detailed records of Langston (1974).

Euborellia annulipes (Lucas), *the ring-legged earwig*

The records below are numerous, but detailed data were not included in Langston & Powell (1975). Therefore, old records are given for the offshore islands and for some of those more recent than mapped (*op. cit.*, Map 2). Only one county (Tuolumne) can be considered new.

California records. — IMPERIAL CO.: Winterhaven, IX-10-70 (R. A. Flock, CDA). LOS

ANGELES CO.: San Clemente Island, Barracks, 1♂, VI-24-1971 (D. C. Rentz & D. B. Weissman, CAS); Santa Catalina Island, 3 specimens, X-28-31-1908 (O. Marsh, NMNH); Granada Hills, 1♀, III-27-1975 (R. Sherman, LACM). MERCED CO.: Atwater, 2♀♀, VIII-7-1975 (R. Langston, CAS); Merced, Applegate Park & County Courts Park, several ♂♂ & ♀♀, XI-3-1975 (F. Carl, MDA). SAN JOAQUIN CO.: Lathrop, VI-4-1972, Quarantine from Vietnam (L. S. Hawkins, CDA); Stockton, 1♀, VII-2-1975 (R. Langston, CAS), 1♀, 4 juv., VII-8-1975 (R. Langston, SJDA), 1♀, VII-14-1976 (R. Langston, CAS). SANTA BARBARA CO.: Santa Rosa Island, 1♀, VII-12-1939 (LACM). SOLANO CO.: Vallejo, shore of Carquinez Strait, 1♂, 2♀♀, XI-21-1965, 1♂, VI-2-1966 (R. Langston, CIS). TUOLUMNE CO.: Sonora, 1♀, 2 juv., VIII-25-1975 (R. Langston, CAS).

Euborellia cincticollis (Gerstaecker), *the African earwig*

Merced and San Joaquin Counties are recorded as new in the data below, representing naturally occurring established populations.

California records. — IMPERIAL CO.: 3 mi. NW. of Glamis, 2♂♂, 2♀♀, IV-1972 (A. Hardy & M. Wasbauer, CDA). MERCED CO.: Merced, 1♂, 3♀♀, VIII-4-1975, 1♀, VIII-7-1975 (R. Langston, CAS). SAN JOAQUIN CO.: Holt, 1♂, XII-20-1971 (L. S. Hawkins, SJDA); 1 mi. E. of Peters, 1♀, 1 juv., I-7-1972 (L. S. Hawkins, SJDA).

Labidura riparia (Pallas), *the shore earwig*

Kern and Santa Barbara Counties are recorded as new. The Bakersfield example is a northerly extension of over 100 miles from the closest Los Angeles County locale. The Montecito specimen is a northwesterly range extension from Malibu in Los Angeles County of about 75 miles.

California records. — IMPERIAL CO.: 3 mi. NW. of Glamis, 100+ ♂♂, ♀♀ & juv. at blacklight, IX-16-1972 (A. Hardy & M. Wasbauer, CDA), 1♂, IX-10-1974 (M. Wasbauer & R. McMaster, CDA). KERN CO.: Bakersfield, 1 adult, VII-14-1971 (H. Knipp, P. Martin & T. Tandrow, CDA). LOS ANGELES CO.: Granada Hills, 1♂, VI-12-1973, 1♂, III-18-1975 (R. Sherman, LACM). RIVERSIDE CO.: Carvina Beach, 12 mi. SE. of Mecca, VII-12-1974 (J. Doyen, CIS). SANTA BARBARA CO.: Montecito, 1♀, VII-1968 (W.S. Hull, SBMNH).

Doru taeniatum (Dohrn)

In Langston & Powell (1975) specimens of this species were identified as *Doru lineare* (Eschscholtz, 1822). However, the revision by Brindle (1971) of the genus *Doru* Burr indicates that the name *D. lineare* applies to a species which occurs in Brazil, Paraguay and Argentina. The species of *Doru* which occurs commonly from Bolivia through Central America, and into Mexico and the United States is *D. taeniatum* (Dohrn, 1862). Gurney (1972) reviews this and the two other North American species of *Doru*. All records of *D. lineare* from Central and North America should be referred to *D. taeniatum*.

Despite its abundance in southeastern Arizona and Mexico, this species does not appear to be established in California. Only two additional records were found, one apparently new for San Bernardino County.

California records. — RIVERSIDE CO.: Blythe, Border Quarantine Station, II-18-1966, Quarantine from Vera Cruz, Mexico (J. M. Donovan, CDA). SAN BERNARDINO CO.: Fontana, VI-9-1972, Quarantine on *Zea mays* (Shurtliff & Bengston, CDA).

Forficula auricularia Linnaeus, *the European earwig*

During recent fieldwork on Santa Rosa Island by the SBMNH, *F. auricularia* has been found to be well established. Localities on the mainland in the Santa Barbara area were mapped as either "quarantine" or "adventive" (Langston & Powell, 1975, Map 10). Currently it is common on the Santa Barbara-Goleta coastal shelf. Likewise, Hogue (1974) considers the European earwig established in the Los Angeles Basin. However, there are no established records from further south along the coast, and the European earwig is unknown from the Colorado or Mojave Deserts. It is now considered established in Merced County and Santa Rosa Island which were not previously recorded.

California records. — MERCED CO.: Merced, Applegate Park & County Courts Park, several ♂♂ & ♀♀, XI-3-1975 (F. Carl, MDA); Merced, 16th & V Sts., 1♀, VII-6-1976 (R. Langston, CAS). SANTA BARBARA CO.: Santa Rosa Island, Arlington Canyon, 2♂♂, 2♀♀, II-25-1976 (W. G. Abbott & P. W. Collins, SBMNH), 1♀, 7 juv., IV-22-1976 (S. E. Miller, SBMNH); S. Rosa I., ranch headquarters area, 2♂♂, 4♀♀, II-24-1976 (Abbott & Collins, SBMNH), 3♀♀, IV-23-1976 (Miller, SBMNH); S. Rosa I., Wreck Canyon, 1♂, VII-3-1971 (D. C. Rentz & D. B. Weissman, CAS).

Quarantine records of Dermaptera in California

In addition to the six foregoing species, four others have been taken in quarantine by the California Department of Food and Agriculture. These have all been determined by Dr. A. B. Gurney, National Museum of Natural History, Washington, D.C.

Labia curvicauda (Motschulsky) [Labiidae: Labiinae]

This circumtropical species is essentially cosmopolitan. Published records as cited in Sakai (1970) include the major Ethiopian, Neotropical and Oriental Regions, Africa and most of the Pacific Ocean Islands. Despite its commonly being found worldwide, it has been taken in California only once previously — in 1934 in San Diego by quarantine from Guam.

SAN JOAQUIN CO.: Lathrop, V-4-1972, Quarantine from Vietnam (L. S. Hawkins & K. Wright, CDA).

Paracosmia toltecus (Scudder) [Forficulidae: Opisthocosmiinae]

This species is known from the state of Vera Cruz, Mexico and also Guatemala (Sakai, 1973).

SAN DIEGO CO.: Port of San Diego, XI-23-1966, Quarantine from Mexico (C. S. Badman & R. M. Ireland, CDA).

Skallistes inopinatus (Burr) [Forficulidae: Forficulinae]

Published distribution includes Costa Rica (types), Antigua, Ecuador, Guatemala, Mexico and Peru (Sakai, 1973).

LOS ANGELES CO.: West Los Angeles, 1 adult on leaf of bromeliad, III-28-1972, Quarantine from Guatemala (F. Cunningham, CDA).

Skallistes vara (Scudder) [Forficulidae: Forficulinae]

The type series is from Puebla, Mexico, with the distribution as cited by Sakai (1973) including the states of Mexico, Morelos and many from Puebla.

SAN DIEGO CO.: Port of San Diego, XI-23-1966, Quarantine from Mexico (C. S. Badman & R. M. Ireland, CDA).

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100 Years Ago In Entomology — 1877

- ADOLPHE BOUCARD**, Coleopterist — was collecting birds and Coleoptera in Costa Rica.
- THOMAS LINCOLN CASEY**, Coleopterist — was a cadet at West Point.
- HENRY EDWARDS**, Lepidopterist — was an actor in San Francisco, associated with the "California Theatre".
- C. R. OSTEN SACKEN**, Dipterist — returned to Germany from New York. He returned a large collection of North American Diptera to the Museum of Comparative Zoology.
- S. W. WILLISTON**, Dipterist — was leading an expedition to western Kansas in search of fossil dinosaurs.
- H. G. HUBBARD and E. A. SCHWARZ**, Coleopterists — were collecting on Lake Superior.
- H. C. FALL**, Coleopterist — at age 15 was in public school in Dover New Hampshire. He collected his first beetle this year.
- W. S. BLATCHLEY**, Orthopterist, Hemipterist, Coleopterist — at age 18 was a door to door salesman in Putnam Co., Indiana.
- W. J. HOLLAND**, Lepidopterist — was in Pittsburgh, where he was a pastor of the Bellefield Presbyterian Church, Professor of Ancient Languages and Trustee of the Pennsylvania College for Women.
- AUGUST BUSCK**, Lepidopterist — was a seven year old child in Randers Denmark.
- J. H. McDUNNOUGH**, Lepidopterist — was born this year.